

GP-302653

ENGINE WITH DUAL OILING AND HYDRAULIC VALVES

ABSTRACT OF THE DISCLOSURE

An internal combustion engine has a plurality of cylinders containing pistons connected with a crankshaft for transmitting power. The cylinders have closed ends, intake and exhaust ports communicating with the cylinders through the closed ends, valves operable to open and close the ports to air and exhaust flow to and from the cylinders, and a lower end pressure oil lubrication system operative to lubricate at least the cylinders, pistons and crankshaft of the engine. The engine includes hydraulic actuators operable to actuate the valves and forming part of a separate upper end hydraulic oil actuation system operative to selectively supply high pressure hydraulic oil to the hydraulic actuators to actuate the valves in a predetermined manner. Optionally, the hydraulic system may have an oil reservoir within the engine block, such as in the valley between the cylinder banks of a V type engine.

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NUMBER SHEET

07002.209

10. engine	60. low pressure oil pump
12. block	62. pickup tube
14. banks	64. oil filter
16. cylinders	66. oil cooler
18. crankcase	68. main oil galleries
20. oil pan	70. crankshaft bearings
22. lower sump	72. oil squirters
24. crankshaft	74. oil reservoir
26. crankpins	76. valley
28. connecting rods	78. transverse wall
30. pistons	80. oil sump
32. cylinder heads	82. high pressure oil pump
34. intake ports	84. pickup tube
36. exhaust ports	86. oil filter
38. intake manifold	88. oil cooler
40. exhaust manifolds	90. hydraulic valve actuators
42. intake valves	92. timing chain
44. exhaust valves	94. hydraulic lines
46. valve heads	96.
47. valve seats	98.
48. valve stems	100.
50. valve guides	102.
52. valve springs	104.
54. lower end pressure oil	106.
lubrication system	108.
56. upper end pressure oil hydraulic	110.
system	
58.	